



PubMed	Nucleotide	Protein	Genome	Structure	PopSet	Taxonomy	OMIM	Books
Search PubMed	for						Go	Clear
Limits		Preview/Index		History		Clipboard		Details

Display	Abstract	Show: 20	Sort	Send to	File
---------	----------	----------	------	---------	------

Entrez  
PubMed☐ 1: Gene 2000 Feb 8;243(1-2):133-7

Related Articles, Links

**ELSEVIER SCIENCE**  
**FULL-TEXT ARTICLE****An effective family shuffling method using single-stranded DNA.****Kikuchi M, Ohnishi K, Harayama S.**PubMed  
Services

Marine Biotechnology Institute, 3-75-1 Heita, Kamaishi, Iwate, Japan.

Related  
Resources

Family shuffling, which is one of the most powerful techniques for in vitro protein evolution, always involves the problem of reassembling the gene fragments into parental gene sequences, because such a process prevents the formation of chimeric sequences. In order to improve the efficiency of hybrid formation in family shuffling, single-stranded DNAs (ssDNAs) were used as templates. The ssDNAs of two catechol 2,3-dioxygenase genes, nahH and xylE, were prepared, the xylE strand being complementary to the nahH strand. When these ssDNAs were digested by DNase I and reassembled, chimeric genes were obtained at a rate of 14%, which was much higher than the rate of less than 1% obtained by shuffling with double-stranded DNAs. Chimeric catechol 2,3-dioxygenases that were more thermally stable than the parental enzymes, XylE and NahH, were obtained by this ssDNA-based DNA shuffling.

PMID: 10675621 [PubMed - indexed for MEDLINE]

Display	Abstract	Show: 20	Sort	Send to	File
---------	----------	----------	------	---------	------

Write to the Help Desk  
NCBI | NLM | NIH  
Department of Health & Human Services  
Freedom of Information Act | Disclaimer

i686-pc-linux-gnu Dec 2 2002 12:27:48